WHOLESALE INDUSTRY

INPUT

ABOUT INPUT

INPUT provides planning information, analysis, and recommendations to companies in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

The company carries out continuous and in-depth research. Working closely with clients on important issues, INPUT's staff analyze and interpret the research data, then develop recommendations and innovative ideas to meet clients' needs. Clients receive reports, presentations, access to data on which analyses are based, and continuous consulting.

Professional staff have, on average, nearly 20 years experience in the information processing industry. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed in 1974, INPUT has become a leading international consulting firm. Clients include over 100 of the world's largest and most technically advanced companies.

OFFICES

UNITED STATES

2180 Sand Hill Road
Menlo Park, CA 94025
(415) 854-3422

Park 80 Plaza West-1
Saddle Brook, NJ 07662
(201) 368-9471

JAPAN

Overseas Data Service Company, Ltd.
Shugetsu Building, No. 12-7 Kita-Aoyama
3-Chome Minato-Ku
Tokyo, 107
Japan
(03) 400-7090

EUROPE

INPUT Europe
500 Chesham House
150 Regent Street
London, W1R 5FA
England
London 439-6288
Telex 261426

PGP Sistema SRL
20127 Milano
Via Soperga 36
Italy
Milan 284-2850

AUSTRALIA

Infocom Australia
Highland Centre,7-9 Merriwa Street
P.O. Box 110, Gordon N.S.W. 2072
(02) 498-8199

000082

COMPUTER SERVICES MARKETS IN THE WHOLESALE INDUSTRY- PETROLEUM, PETROCHEMICAL, FOOD, AND ELECTRICAL/ELECTRONIC

INDUSTRY REPORT #9

SEPTEMBER 1977

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

INPUT
IN-WH

Digitized by the Internet Archive
in 2015

https://archive.org/details/wholesaleindustrunse

TABLE OF CONTENTS

COMPUTER SERVICES MARKETS IN THE WHOLESALE INDUSTRY

		Page
I	INTRODUCTION	1
II	EXECUTIVE SUMMARY	3
	A. Findings	3
	B. Recommendations	9
III	INDUSTRY STRUCTURE	11
	A. Composition	11
	B. Structure Of The Industry	14
	C. Geographic Distribution	14
	D. Industry Revenues	17
IV	USE OF EDP	19
	A. Use Of Computers Is Widespread And Growing	19
	B. Expenditures On EDP	20
	1. Petroleum And Petrochemical	23
	2. Electrical And Electronic	23
	3. Food	25
V	USE OF COMPUTER SERVICES	27
	A. Services Expenditures Will Grow 14% Annually	27
	B. Types Of Processing Services	30
	C. Efficiency Is The Key	33
	1. Petroleum/Petrochemical Wholesale User	34
	2. Electrical/Electronic Wholesale User	37
	3. Food Wholesale User	40

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

		Page
VI	DISTRIBUTED SYSTEMS AND SMALL BUSINESS SYSTEMS	42
	A. Attitudes Vary Widely	42
	B. Some Typical Distributed Systems	43
	C. Some Stand-Alone Mini Systems	44
	D. Turn-Key Systems Available	45
VII	COMPUTER SERVICES VENDORS	47
	A. Overview	47
	B. Corporate Snapshots	49
APPENDIX A:	DATA BASE	57
APPENDIX B:	DEFINITIONS	61
APPENDIX C:	QUESTIONNAIRES	
	User	65
	Vendor	73

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

LIST OF EXHIBITS

COMPUTER SERVICES MARKETS IN THE WHOLESALE INDUSTRY

			Page
I-	1	Wholesale Distribution Interview Program	2
II-	1	Expenditures By Computer Services Wholesale Industry, 1977/1982	4
	2	Computer Services Expenditures By Mode, 1977/1982, For Selected Wholesale Industry Sectors (Petroleum/ Petrochemical, Food, Electrical/Electronic)	6
	3	Processing Services Expenditures By Application, 1977/1982, For Selected Wholesale Industry Sectors (Petroleum/Petrochemical, Food, Electrical/ Electronic)	7
III-	1	SIC Codes For Selected Wholesale Distribution Industry Segments	12
	2	Definitions Of Size Categories	13
	3	Size Distribution Of Selected Wholesale Distribution Segments (Number Of Firms, Establishments, Or Reporting Units)	15
	4	Geographic Distribution Of All Wholesale Revenues And Establishments	16
	5	Distribution Of Wholesale Revenues (1976)	18
IV-	1	EDP Used For Wholesaling By Firms Interviewed	21
	2	Use Of EDP By Firms Interviewed (According To Size)	22
	3	EDP Expenditures Of Selected Wholesale Distribution Sectors (Petroleum/Petrochemical, Electrical/ Electronic, Food)	24

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

			Page
V-	1	Computer Services Expenditures By Selected Wholesale Industry Segment, 1976-1982	28
	2	Computer Services Markets In Selected Wholesale Segment By Service Mode, 1976-1982	29
	3	Expenditures For Processing Services In Selected Wholesale Segments By Type Of Service 1976 And 1982	31
	4	1977 Budgets For Wholesale Computer Services Petroleum/Petrochemical Users	36
	5	1977 Budgets For Wholesale Computer Services Electrical/Electronic Users	38
	6	Ranking Of Factors Used In Selecting Computer Services Vendors (Electrical/Electronic And Food Wholesalers)	39
	7	1977 Budgets For Wholesale Computer Services (Food)	41
VII-	1	Computer Services Vendors And Wholesale Industry Specialization	48

APPENDIX A:

	Distribution Of User Expenditures For Processing Services In 1976 By Mode And Type Of Service For Wholesalers Covered In This Report ($ Millions)	57
	Computer Services Expenditures By Selected Wholesale Industry Segments 1976-1982	58
	Computer Services Markets In Selected Wholesale Segment By Service Mode 1976-1982	59
	Expenditures For Processing Services In Selected Wholesale Segments By Type Of Service 1976 And 1982	60

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

I. INTRODUCTION

I INTRODUCTION

- This report is produced by INPUT as part of the Market Analysis Service (MAS).

- Research carried out for this report was based on a series of telephone interviews and contacts as specified in Exhibit I-1.

- In electrical, and electronic sectors, interviews were carried out with firms which were exclusively wholesale; that is, they did no manufacturing, and no retail distribution.

- Interviews were carried out in April, May, and June 1977.

- Prior to the research activity, each client was asked to suggest particular areas of interest to be incorporated in the study.

- Individual client inquiries about this report are welcome.

- INPUT wishes to thank the following associations for providing information about their industry:

  - Association of Wholesale Grocers
  - National Electronic Distributors Association
  - National Association of Electrical Distributors
  - National Industrial Distributors Association
  - Southern Industrial Distributors Association
  - Electrical Wholesaling (Magazine)

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT I-1

WHOLESALE DISTRIBUTION INTERVIEW PROGRAM

USERS	
Petroleum (Integrated companies)	10
Petrochemical	10
Food	8
Electrical/Electronic	10
Sub Total	38
VENDORS	15
ASSOCIATIONS	5
TOTAL INTERVIEWS	58

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

II. EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. FINDINGS

1. MARKET STRUCTURE

- The wholesale distribution industry is one of the largest, yet most diversified markets for computer services. In this study, three sub-sectors with widely different characteristics were selected for analysis:
  - Petroleum/Petrochemical (very large firms dominate).
  - Electrical/Electronic (a size range of participants from small to very large).
  - Food (almost all firms in the "small" category).
- There are approximately 91,250 establishments in the U.S. in the sub-sectors studied. The size distribution is:
  - 91,000 with annual sales of less than $20 million.
  - 159 with annual sales of $20-$100 million.
  - 32 with annual sales of $100-$300 million.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- 53 with annual sales over $300 million, with all but 6 of these in the Petroleum/Petrochemical sub-sector.

- One-third of establishments in the total wholesaling sector are on the Atlantic Coast and these establishments account for nearly half of the industry revenues.

- Sales of merchant wholesalers - independently owned establishments as compared to wholesalers owned by manufacturers - had sales of $500 billion in 1976, approximately half of the industry total. Merchant wholesalers account for 75% of the industry's employment, and tend to be less automated.

2. DATA PROCESSING USE BY WHOLESALE FIRMS

- As of 1977, almost half of all wholesale firms do not yet use computerized accounting and inventory control techniques (in-house and/or services). However, small firms dominate in the wholesale sector, with resultant high potential marketing costs.

- Overall expenditures for computer services by the wholesale industry will increase at an average rate of 14% per year, from $430 million in 1977, to $810 million in 1982, as shown in Exhibit II-1.

- Computer services revenues derived from the three segments of the wholesale distribution industry covered by this report will also increase nearly 14% per year, from a 1977 level of $130 million to $247 million in 1982.

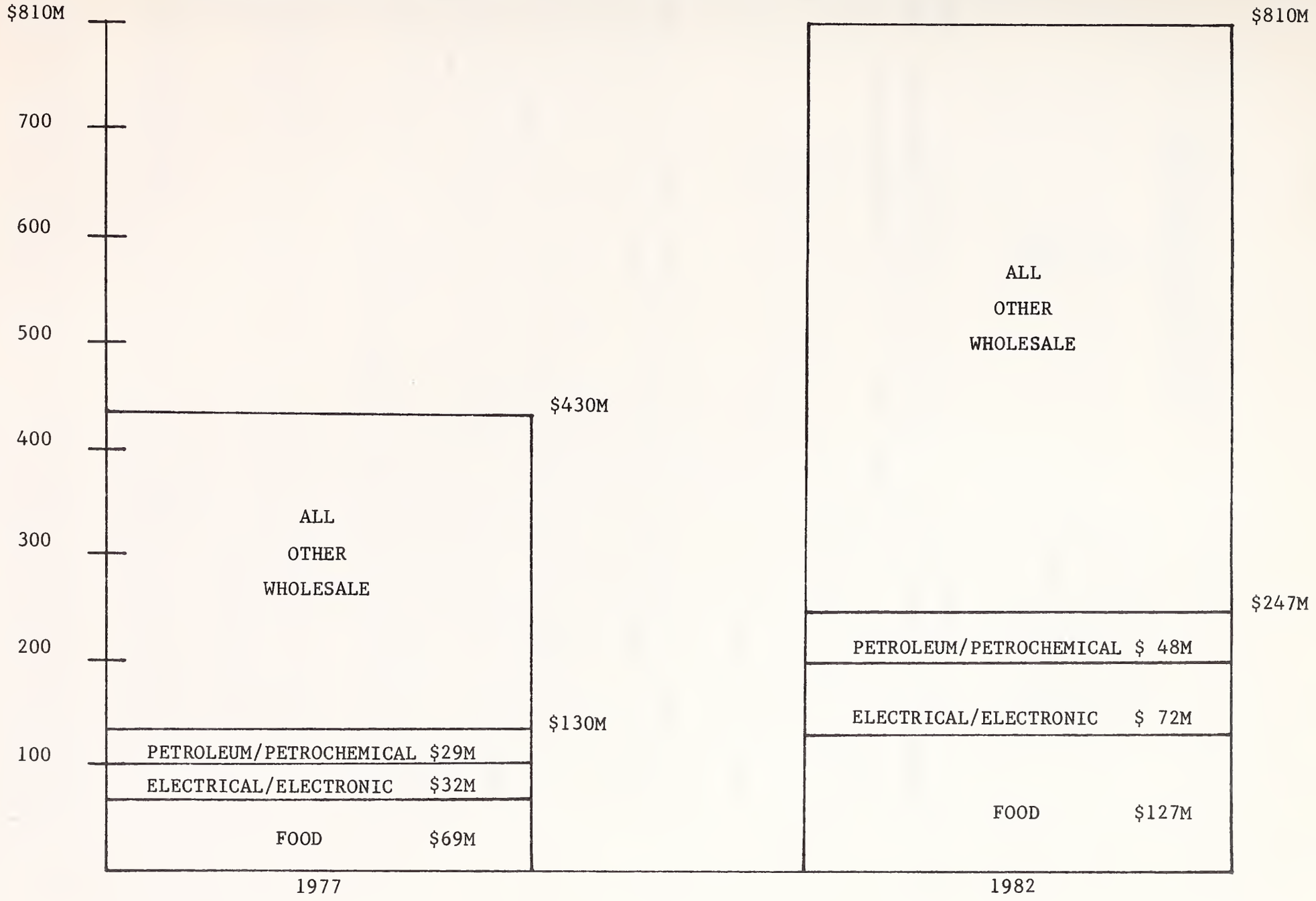
- The three sectors covered in this report represent 30% of the total wholesale industry sales in the U.S.

- In order of rank, growth in computer services expenditures by each of the surveyed sub-sectors will be: (Also shown in Exhibit II-1)

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

EXHIBIT II-1

EXPENDITURES BY COMPUTER SERVICES WHOLESALE INDUSTRY, 1977/1982



© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

		Avg Annual Growth Rate
-	Electrical/Electronic	18%
-	Food	13%
-	Petroleum/Petrochemical	10%
	TOTAL	14%

- The degree of automation of order entry is surprisingly low in the petroleum/petrochemical industry segments, even where huge internal EDP capability exists. Petrochemical firms are further advanced than are petroleum firms in this application.

3. COMPUTER SERVICES OPPORTUNITIES

- The computer services vendor must approach the market with care, since the sectors have widely differing characteristics. To date, most revenues are derived from cross-industry applications. Large firms tend to emphasize in-house applications, while stand-alone business computer systems are succeeding in smaller firms. To date, few vendors have shown outstanding success with wholesale users generally. Opportunities are emerging for targeting specific industry sub-sectors, specific sizes of companies, and specific applications such as forecasting packages. An example of a targeted market in a related sector, retail distribution, is automobile dealers:

  - Reynolds and Reynolds who have built annual revenues to approximately $20 million by offering accounting, inventory and payroll processing to automobile dealers.

  - Computerized Automotive Reporting Service, Inc. (CARS) who had 1976 revenues of $10.6 million exclusively in this sub-sector.

- The major growth segment will be in Remote Computing Services (RCS) (18.3% per year) and software products (21.2% per year). RCS is at a current level of

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

$37 million per year, while software products sales in 1977 will be $14 million, as shown in Exhibit II-2.

- Processing services expenditures for specialty applications (order entry, inventory control, etc.) will grow at an average rate of nearly 14% per year, followed by general business applications (payroll, A/R, A/P, general ledger, etc.), at 12% per year. Expenditures for these years are shown in Exhibit II-3.

- The major market for wholesale computer services is in medium and large size companies ($20-$300 million annual sales).

  - Very large firms ($300 million), particularly in petroleum and petrochemical, have strong policy positions supporting in-house data processing.

  - Small firms (less than $20 million), even at entry level, are going from manual systems directly to small business computer systems.

- Order entry and inventory management are the major applications. Wholesalers work on very small gross margins (3.5% in 1973), and are pressed for high efficiency in stock control, particularly in a national market with fluctuating demand, and rapidly changing retail prices.

- Facilities management appears to be of special interest to electrical/electronic wholesalers as an area being explored. There is not much FM activity there now.

- Within the petroleum industry, users unanimously agreed that vendors should specialize in their industry segment. In electrical/electronics and food, the issue was not so clearly drawn, with both users and vendors having mixed opinions.

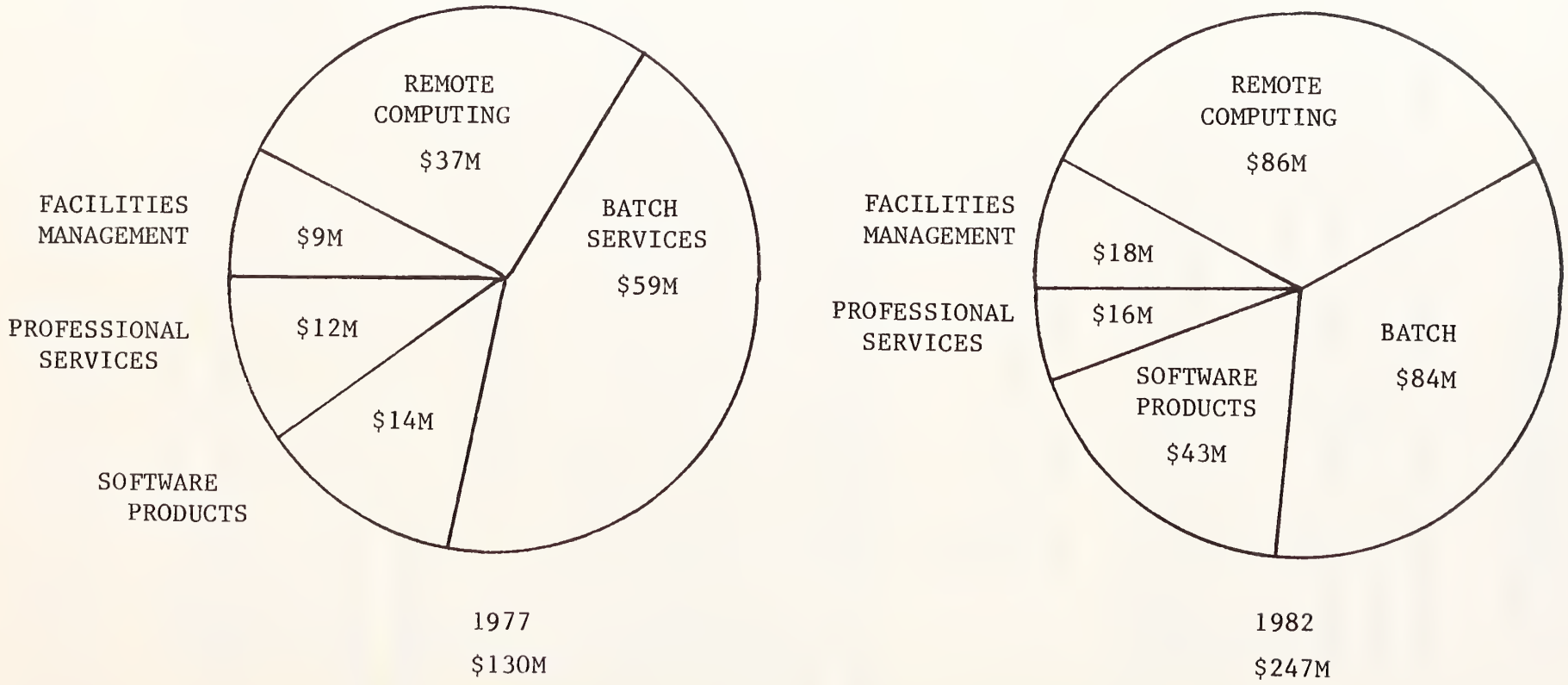
© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT II-2

COMPUTER SERVICES EXPENDITURES BY MODE, 1977/1982

FOR SELECTED WHOLESALE INDUSTRY SECTORS

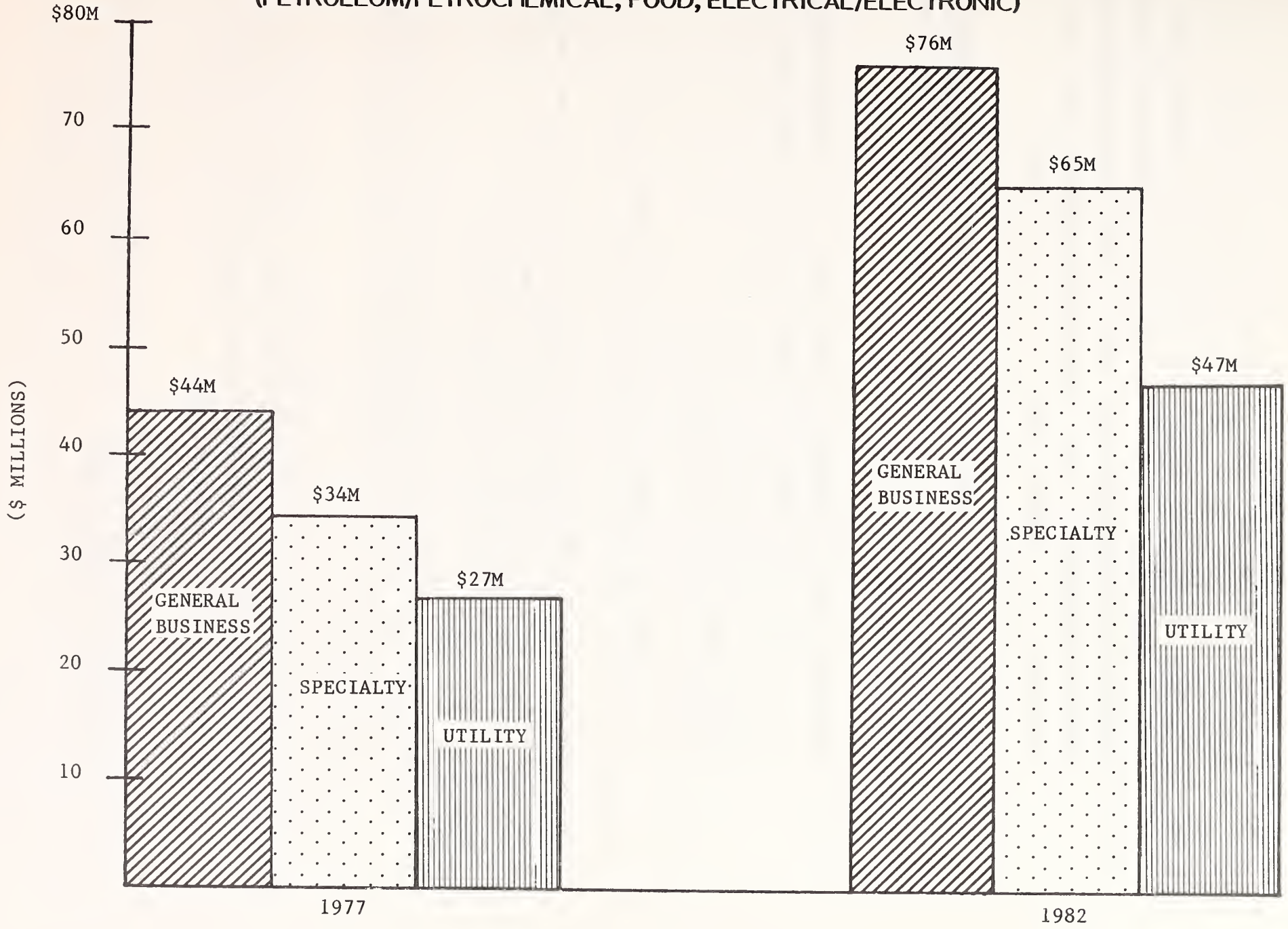
(PETROLEUM/PETROCHEMICAL, FOOD, ELECTRICAL/ELECTRONIC)



© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

EXHIBIT II-3

PROCESSING SERVICES EXPENDITURES BY APPLICATION, 1977/1982
FOR SELECTED WHOLESALE INDUSTRY SECTORS
(PETROLEUM/PETROCHEMICAL, FOOD, ELECTRICAL/ELECTRONIC)



© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

4. COMPETITIVE ENVIRONMENT

- Of computer services vendors currently active in the wholesale industry, ADP, General Electric Information Services, Itel, and Service Bureau Company are leaders. Their combined annual revenues from this sector total $66 million or only 10% of the industry total; this reflects the diversity of the industry and the absence of any dominating supplier or group of suppliers.

- Some vendors, such as ADP and MCAUTO protect their revenues against business losses from in-house computing by offering turnkey computer systems as well as services.

- There are few major processing services vendors in the markets analyzed in this study, and their particular industry segments seldom overlap. Most frequently encountered vendors (in user interviews) are Keydata, MCAUTO, Tymshare and Xerox Computer Systems.

  - American Data centers is known in Electrical/Electronics.

- Minicomputer manufacturers are successful in the sub-sectors studied when installing turnkey stand-alone systems. Hewlett Packard is an example of a vendor who has successfully addressed this market.

- Distributed networks and computing are considered to be future ideas, not present realities. Many users describe these as ideas marketed by minicomputer salesmen.

- Pricing flexibility is evident in these industry segments with transaction pricing and negotiated fixed price contracting being offered, in addition to or instead of traditional resource pricing.

- Some smaller firms specializing in the wholesaling sector have been acquired by large firms. Examples are:

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Distronics, a part of Western Union, had estimated sales of $2.2 million in 1976. It was acquired in 1971.

- Informatics recently acquired Management Horizons Data Systems, Inc. (MHDS) from FNCB Capital Corp., a subsidiary of Citibank. MHDS had 1976 sales approaching $8.0 million, primarily in retail/wholesale.

B. RECOMMENDATIONS

- New clients for services should be sought from medium sized firms ($20 to $100 million in annual sales), where competition from small computers (small firms) and in-house systems (very large firms) is less severe.

- At the high end of the market, clients usually have competent in-house EDP capability and are seeking sophisticated order entry and inventory control software to use in-house (e.g., CIDS, by Brandon Applied Systems). In the absence of such sophisticated software, users will turn to remote computing services vendors if the vendor has a product which is cheaper to use than to develop in-house. This is frequently a temporary situation, and vendors can maintain their position longest by agreeing to customize software. Vendors who cannot offer highly sophisticated order entry and inventory control applications easily integrated into financial systems, should avoid large and very large firms as targets of opportunity.

- At the low end of the market, vendors should consider offering turnkey small business computer systems as an alternative to batch or remote computing services. New entry level clients are proceeding directly from manual systems to small business computers.

- Data base opportunities exist in the transportation area, with route and rate data being of high value. Only one interactive supplier of such a data base has been located - Distribution Sciences, Inc. (Schiller Park, IL).

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Users are interested in improved forecasting packages to be used in conjunction with inventory control. They frequently specify this application as a current need.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

III. INDUSTRY STRUCTURE

III INDUSTRY STRUCTURE

A. COMPOSITION

- This study covers 4 major wholesale distribution industry segments:

  - Petroleum - integrated companies
  - Petrochemical
  - Food
  - Electrical and Electronic
  - Food

- The SIC codes for each group are given in Exhibit III-1.

- In order to standardize the meaning of business size throughout the Market Analysis Service (MAS), size is being defined herein according to the definitions in the 1976 Annual Report on the Computer Services Industry, and is shown in Exhibit III-2.

- Very large companies, having sales over $300 million, are all in the Fortune 500 group.

- Large companies, having sales between $100 million and $300 million, comprise the total membership of the Second Fortune 500.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT III-1

SIC CODES FOR SELECTED WHOLESALE DISTRIBUTION INDUSTRY SEGMENTS

DESCRIPTION	SIC MAJOR GROUP	GROUP NUMBER	INDUSTRY NUMBER
WHOLESALE TRADE			
Durable Goods	50	--	--
Non-durable Goods	51	--	--
PETROLEUM	--	517	
PETROCHEMICAL	--	516 519	 5191 5198
ELECTRICAL GOODS, INCLUDING		506	
Electrical Apparatus and Equipment			5063
Electrical Appliances			5064
Electronic Parts and Equipment			5065
GROCERIES AND RELATED PRODUCTS (FOOD)	--	514	

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

EXHIBIT III-2

DEFINITIONS OF SIZE CATEGORIES

SIZE	ANNUAL SALES
SMALL	<$20 million
MEDIUM	$20-$100 million
LARGE	$100-$300 million
VERY LARGE	<$300 million

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

B. STRUCTURE OF THE INDUSTRY

- Exhibit III-3 shows the distribution, by size, of the wholesale distribution industry segments analyzed herein.

- In the petroleum industry, only members of the 19 largest integrated oil companies were included in the interview program. These 19 companies, with annual revenues ranging from $2 billion to $45 billion, are responsible for more than 75% of domestic crude oil production, U.S. refinery capacity, and gasoline sold.

- The entire wholesale trade industry accounts for about 310,000 establishments, of which these industry segments represent nearly 30%.

- Merchant wholesaling is an industry composed mainly of small, independent firms. Nearly 90% of such firms have annual revenues less than $2 million, and only 5% have more than 50 employees.

- Changing market conditions and varying customer needs will demand more sophisticated operating methods and scientific management. The result will be fewer and larger wholesale firms.

C. GEOGRAPHIC DISTRIBUTION

- Exhibit III-4 shows the distributors of sales and number of establishments in wholesale trade throughout the U.S. The Atlantic coast is seen to be the location of over 1/3 of the establishments, and nearly half the revenues of the wholesale industry.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

EXHIBIT III-3

SIZE DISTRIBUTION OF SELECTED WHOLESALE DISTRIBUTION SEGMENTS

(NUMBER OF FIRMS, ESTABLISHMENTS, OR REPORTING UNITS)

SIZE	(1) PETROLEUM	(2) PETROCHEMICAL	(3) FOOD	(3) ELECTRICAL AND ELECTRONIC
SMALL	19,000	12,000	40,000	20,000
MEDIUM	50	40	25	44
LARGE	10	4	7	11
VERY LARGE	32	15	1	5

* (1) Number of firms
(2) Number of reporting units in U.S. County Business Patterns 1973
(3) Number of establishments, U.S. statistics 1972
29,000 out of the 40,000 are "merchant wholesalers"

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT III-4

GEOGRAPHIC DISTRIBUTION OF ALL WHOLESALE REVENUES AND ESTABLISHMENTS

	REGION	% REVENUES	% ESTABLISHMENT
	New England	5	5
(1)	Mid Atlantic	24	19
(2)	South Atlantic	13	13
(3)	East North Central	20	18
(4)	West North Central	9	10
(5)	East South Central	5	6
(6)	West South Central	8	11
(7)	Mountain	3	5
	Pacific	13	13
		100%	100%

(1) New York,New Jersey, Pennsylvania
(2) Delaware, Maryland, D.C., Virginia W. Virginia, Carolinas, Georgia, Florida
(3) Ohio, Indiana, Illinois, Michigan, Wisconsin
(4) Minnesota, Iowa, Missouri, Dakotas, Nebraska, Kansas
(5) Kentucky, Tennesse, Alabama, Mississippi
(6) Arkansas, Louisiana, Oklahoma, Texas
(7) Montana. Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah Nevada

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

D. INDUSTRY REVENUES

- Sales of merchant wholesalers - mostly local independent distributors - reached $500 billion in 1976, a gain of 11% over 1975. Merchant wholesalers, accounting for 75% of the industry's employment, account for 50% of all wholesale sales. The remainder is accounted for by other distribution outlets such as manufacturers, sales branches, merchandise agents, and brokers.

- Because retailers and manufacturers are also performing distribution functions, the wholesaler is able to act as a distributor only in those markets where he has demonstrated his economic efficiency and capability. Manufacturers have become the wholesalers' greatest competition for the business of large customers, through direct selling.

- During 1974, reflecting the 20% increase in wholesale prices, merchant wholesalers' sales increased 23%, and as a percentage of gross national product, increased from 26% to 34%.

- If the rate of inflation is reasonably limited and economic conditions remain stable, merchant wholesaler revenues should increase at a (CAGR) of 8.3%, yielding sales of about $1.0 trillion in 1985.

- Merchant wholesaling is an industry comprised mainly of small, independent firms. Nearly 90% of such firms have annual sales of less than $2 million and less than 5% have more than 50 employees.

- Exhibit III-5 shows the distribution of wholesale revenues by each industry segment covered in this report.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT III-5

DISTRIBUTION OF WHOLESALE REVENUES (1976)

	MERCHANT WHOLESALERS		ALL WHOLESALERS	
	($B)	(%)	($B)	(%)
Petroleum, Petroleum Products	$ 21	4.2	$ 65	6.7
Electrical/Electronic	25	5.1	70	7.2
Groceries and Related Products	98	19.7	157	16.1
SUB TOTAL	144	29.0	292	30.0
Other Wholesale Distribution Industries	354	71.0	684	70.0
TOTAL	$498	100%	$976	100%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

IV. USE OF EDP

IV USE OF EDP

A. USE OF COMPUTERS IS WIDESPREAD AND GROWING

- Throughout the wholesale industry the use of computers and computer services is high.
  - Larger non-merchant wholesalers nearly all have in-house computer systems which are used for wholesale activities and may also be used for other corporate functions as well.
  - The smallest merchant wholesalers are finding small business computers to be a practical and economical entry level for data processing.
- The U.S. Government estimates that in 1974, 53% of wholesale firms were using EDP.
- In a survey by the National Association of Wholesale Distributors, 56% of the survey respondents reported they were using, or planning to use, computers in 1975. This compares with 45% in 1972 (a 24% increase in 3 years), and does not include the use of computer services.
- In a 1975 survey of the membership of NEDA (National Electronic Distributors Association), 381 members responded, indicating that 43% were using EDP.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Firms with in-house computers: 18%

- Firms using outside services: 25%

- NAED (National Association of Electrical Distributors) estimates that within its membership:

  - 25% have in-house computers

  - 25% use outside service

- Computers used by those firms interviewed are shown in Exhibit IV-1. Where the firms are involved in multiple activities (such as manufacturing and/or retailing), the computers indicated are the ones used for the wholesale function, and may also be used for other functions.

- Considerable effort was extended in INPUT's attempt to get a balanced representation of computer services users.

  - Among very large petroleum/petrochemical firms, none were found where computer services use was significant.

  - In electrical/electronic and food, a 50% share of computer services users was finally represented. Most of our initial contacts were manual operations or used in-house small business computers.

  - Exhibit IV-2 shows the distribution of EDP usage by industry segment and by user size, for those firms interviewed.

B. EXPENDITURES ON EDP

- For the 3 wholesale sectors described in this report, total EDP expenditures will increase from $1.4 billion in 1976 to $2.45 billion in 1982, equivalent to an

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

EXHIBIT IV-1

EDP USED FOR WHOLESALING BY FIRMS INTERVIEWED

COMPUTER TYPE	NUMBER OF FIRMS USING
PETROLEUM AND PETROCHEMICAL	
IBM 370/168 or 370/158	14
IBM 370/155 or 370/145	5
Computer Services Only	0
In-House Plus Computer Services	5
TOTAL NUMBER OF INTERVIEWS	24
ELECTRICAL/ELECTRONIC	
Honeywell 6620	1
IBM 370/145	1
IBM 360/50	1
IBM System 32	1
"Unknown" In-House Computer	1
Computer Services Only	5
TOTAL NUMBER OF INTERVIEWS	10
FOOD	
Burroughs 1726	1
IBM System 3	1
Univac 9030	1
Computer Services Only	4
In-House Plus Computer Services	1
TOTAL NUMBER OF INTERVIEWS	8

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT IV-2

USE OF EDP BY FIRMS INTERVIEWED (ACCORDING TO SIZE)

	NUMBER OF USERS				
	SMALL	MED	LARGE	VL	TOTAL
PETROLEUM AND PETROCHEMICAL					
In-House Computer	0	0	0	20	20
Also Used Computer Services	0	0	0	3	3
Computer Services Only	0	0	0	0	0
ELECTRICAL AND ELECTRONIC					
In-House Computer	1	0	1	3	5
Also Use Computer Services	0	0	0	0	0
Computer Services Only	1	0	4	0	5
FOOD					
In-House Computer	1	2	0	1	4
Also Use Computer Services	0	0	0	1	1
Computer Services Only	3	1	0	0	4
TOTAL					
In-House Computer	2	2	1	24	29
Also Use Computer Services	0	0	0	4	4
Computer Services Only	4	1	4	0	9
					42

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

average annual growth rate (AAGR) of 12%. The data are summarized in Exhibit IV-3.

1. PETROLEUM AND PETROCHEMICAL

- The increase in EDP expenditures in the petroleum/petrochemical segment will result, in part, from the automation of petroleum bulk stations and terminals for order entry and inventory management purposes.

  - There are over 30,000 bulk stations and terminals, largely manually operated today, which petroleum firms are in process of automating. These terminals and stations are fed by oil tankers and pipelines, and are the well-known groups of large oil tanks firm which tanker trucks, ships and railroad cars are loaded with petroleum liquid products.

  - In addition to applying existing programming staff to the task and using existing capability in the central processor, petroleum/petrochemical companies will be buying minicomputers and intelligent terminals and using this for data collection and display in distributed networks.

  - Petroleum and petrochemical firms in the large and very large size categories have large in-house EDP capabilities, as was shown in Exhibit IV-1. In the largest integrated petroleum firms there tend to be management policies which dictate - or, at the very least, subsidize and support the idea - that all data processing will be done in-house if at all possible. Thus, the use of outside services is minimized.

  - Suntech, Inc., a subsidiary of the Sun Oil Company, is unique in being a separately organized EDP business.

2. ELECTRICAL AND ELECTRONICS

- The National Association of Electrical Distributors (NAED) Methods and Systems Committee produced a comprehensive set of guidelines to assit its

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT IV-3

EDP EXPENDITURES OF SELECTED WHOLESALE DISTRIBUTION SECTORS (PETROLEUM/PETROCHEMICAL, ELECTRICAL/ELECTRONIC, FOOD)

	1977 (% MILLION)	1978	GROWTH (%)	1982 ($M)	AAGR (%)
PETROLEUM/PETROCHEMICAL	$325	$358	10%	$ 572	12%
ELECTRICAL/ELECTRONIC	350	392	12	700	15
FOOD	735	794	8	1176	10
TOTAL	$1.4B	$1.54B	9.2%	$2.45B	12%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

members in making a decision about the use of EDP. Among them is the following rule of thumb for EDP expenditures:

Annual Sales ($ Million)	Affordable Annual EDP Expense (% of sales)
2.5	1.25-1.75
2.5-5.0	1.00-1.50
5.0-7.5	0.75-1.25
10.0	0.75

- Among the population of large and very large firms interviewed for this study, the industry norm for EDP expense as a forecast of sales was considered to be 0.7% which corresponds nicely with NAED's recommendation. However, actual EDP expenditures ranged from 0.1% to 1.0% with an overall average of 0.55%.

- NAED described as "probably the best (EDP) alternative for most electrical distributors" is to buy a dedicated in-house system that has been proven as operating satisfactorily in similar business.

3. FOOD

- Most food distribution companies which are large enough to use either in-house computers or outside services integrate food distribution with either food processing (see INPUT's Industry Report "Computer Services Markets in the Food Processing Industry"), manufacturing, or retail distribution.

- The overall use of EDP in firms which do food processing as well as distribution is considerably lagging. When used, EDP is used mainly for general business applications (54% and 12% respectively of the EDP budget going for administration and purchasing). This is followed by an average of 23% for distribution.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- The actual portion of the EDP budget spent by food processing companies for distribution ranges from 3% for small firms, to 30% for large firms.

- Thus, about $125 million of the total of $735 million spend for EDP by food wholesalers (17%) is spent by firms primarily classified as food processors (SIC 20).

- Food wholesalers responding to this survey report EDP expenditures ranging from 0.3% to 1.0% of annual sales. The overall industry average is 0.5%.

- Most users report that their Use of EDP will depend upon business growth rather than upon new or enhanced applications requirements. Many companies, particulary in the $100 million to $300 million annual sales range, adhere strictly to an EDP expenditure policy tied directly to the level of sales.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

V. USE OF COMPUTER SERVICES

V USE OF COMPUTER SERVICES

A. SERVICES EXPENDITURES WILL GROW 14% ANNUALLY

- Computer services expenditures by these three segments of the wholesale industry will grow at an overall rate of nearly 14% over the next 5 years, increasing from $130 million in 1977 to $247 million in 1982, as shown in Exhibit V-1.

- While expenditures from the food segment may be expected to increase as sophistication increases and consumer pricing pressure increases, the petroleum/petrochemical segment continue to proclaim its intention to bring more of its outside EDP in-house.

- Computer services users in wholesale tend to be mid-sized firms. Te largest firms have in-house EDP centers and wholesale functions are often one of several corporate activities being supported. The smaller wholesalers tend to do their work manually or are using small busienss computer systems.

- The impact of the in-house commitments of the petroleum/petrochemical sectors, and the successful penetration of small business computers can be seen in Exhibit V-2.

  - While remote computing services and software products will continue to enjoy high growth rates of 18% and 21% respectively, their growth will be somewhat slowed. The largest petroleum/petrochemical firms are

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT V-1

COMPUTER SERVICES EXPENDITURES BY SELECTED WHOLESALE INDUSTRY SEGMENTS 1976-1982

INDUSTRY MARKET	COMPUTER SERVICES EXPENDITURE				
	1976 ($ MILLIONS)	1977 ($ MILLIONS)	GROWTH (%)	1982 ($M)	AAGR(77-82) (%)
PETROLEUM/PETROCHEMICAL	$ 26.4	$ 29.6	12	$ 47.7	10
ELECTRICAL/ELECTRONIC	26.9	31.7	18	72.3	18
FOOD	61.6	69.0	12	127.0	13
SUB TOTAL	$114.9	$130.3	13.4	$247.0	13.7
TOTAL WHOLESALE	$377.0	$429.8	14.0%	$809.5	14.0%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

EXHIBIT V-2

COMPUTER SERVICES MARKETS IN SELECTED WHOLESALE SEGMENT BY SERVICE MODE 1976-1982

MODE OF SERVICE	1976 ($ MILLION)	1977 ($ MILLION)	GROWTH (%)	1982 ($M)	AAGR 77-82 (%)
REMOTE COMPUTING SERVICES	$ 31.0	$ 36.9	19	$ 85.6	18.3
FACILITIES MANAGEMENT	8.0	9.2	15	18.4	15.0
BATCH SERVICES	55.0	58.9	7	84.0	7.0
PROCESSING SERVICES TOTAL	$ 94.0	$105.0	11.7	$188.0	12.3
SOFTWARE PRODUCTS	10.9	13.6	24.7	43.0	21.2
PROFESSIONAL SERVICE	10.0	11.7	17.0	16.0	6.3
TOTAL	$114.9	$130.3	13.4%	$247.0	13.7%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

buying order entry software and installing it on their in-house systems. Some oil companies have been testing these software packages on remote computing services.

- The continued slow growth (7% per year) of batch services reflects the market erosion by small business systems.

- Professional services growth is slow because of the huge internal resources available in petroleum and petrochemicals.

B. TYPES OF PROCESSING SERVICES

- Processing services are mainly used for general business applicatons-payroll, accounts receivable, accounts payable-followed by order entry and inventory control, as shown in Exhibit V-3.

- Types of processing services used by the Wholesale Distribution Industry:

  - General Business services often are complete software packages provided by the vendor and delivered by batch processing. Applications are not industry specialized and require a minimum of modification prior to industry specialization.

- General business applications include:

  - Credit checking

  - Accounts receivable

  - Accouts payable

  - Payroll

  - Gross margin analysis

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

EXHIBIT V-3

EXPENDITURES FOR PROCESSING SERVICES IN SELECTED WHOLESALE SEGMENTS, BY TYPE OF SERVICE 1976 AND 1982

PROCESSING SERVICE	EXPENDITURES ($ MILLION) 1976	1982	AAGR %
GENERAL BUSINESS	$39	$ 76	11.9%
SCIENTIFIC	0	0	0
SPECIALTY APPLICATIONS			
Order Entry	9	21	15.0
Inventory Control	10	22	14.1
Other	11	22	12.3
Sub Total	30	65	13.7
UTILITY	25	47	11.1
TOTAL	$94	$188	12.3%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Specialty applications services include the development of comprehensive applications packages for order processing, control of inventory (permitting the balancing of inventory investment and customer responsiveness), and billing.

- These applications are time sensitive and therefore generally are incorporated into an "on-line" system.

- Controlling inventory is a key element in the management of assets. Inventory should be just sufficient to serve customer demands, and yet not result in spoilage or obsolescence.

  - bakeries provide retail store delivery and utilize route accounting applications to control their "rolling warehouses".

  - Electronic product distributors may be impacted by sudden price deteriorations (e.g., electronic calculators, semi-conductor components, etc.) and will therefore minimize inventory investment is such products.

  - Cost of carrying inventory rises in relation to interest rates, and inventory investment must decrease in order to retain profit margins.

  - Not having product in stock to meet customer demand will result in either lost sales or the generation of additional paperwork in creating backorders.

- Some specialty applications are:

  - Order processing and entry:

    . acknowledgement of order
    . pricing
    . delivery time

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

- Inventory control:

  . forecasting
  . order point calculation
  . order quantity calculations
  . "ABC" analysis
  . purchasing
  . stock and warehouse control

- Shipping and invoicing

- Sales analysis

C. EFFICIENCY IS THE KEY

- The main requirements of wholesalers are those which contribute to maintaining or improving the very narrow profit margins under which the industry operates.

  - In 1973, gross margins of 3.5% were reported for wholesalers, compared with 5.9% for a sample of U.S. business.

  - After tax profits of food wholesalers in the early 1970s ranged between 0.5% and 0.6% of sales.

- Inventory management is a primary application. The average wholesaler had 12% of his annual sales in stock at the end of 1975. In spite of EDP, this figure has ranged erratically between 10.7% and 12.7% since 1950.

  - Computerized accounting and inventory control techniques are used by an estimated 53% of wholesale firms.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Order entry systems which enable rapid movement of stocks, short turn-around billing, and improved re-order capability are essential.

- Large wholesalers, with large trucking fleets, are employing route planning and measurements and control of rout-driver performance.

- Simulation models are being used to forecast markets and to locate efficient sites for new warehouses.

- Transportation cost control is assisted by the availability of data bases with route and rate information used to minimize the cost of transportation.

I. PETROLEUM/PETROCHEMICAL WHOLESALE USERS

- Petroleum firms wholesale liquid petroleum products in large bulk quantities from pipelines and bulk storage tanks. Product is shipped as raw petroleum or refined petroleum products. In larger integrated oil companies, the oil may be used to produce gasoline, lubricants, and other heavy and light oils within the company; it may be sold to a petrochemical division of the same company; it may be sold to an independent refinery or petrochemical company. At each step, products are manufactured and shipped either in large bulk, smaller bulk (oil drums), or packaged products to be sold in gas stations, gardening supply stores, or retail drug and chemical stores. The wide range and diversity of products are only recently being distributed with the aid of automation-mostly on systems developed in-house within the last 10 years, prior to the availability of software packages which would do the job.

- Distribution responsibility in the petroleum and petrochemical industries is autonomous among the various devisions of a large company. Thus, a system used by the Marketing Systems Division of Standard Oil of Ohio does not include their Distron Chemicals and Plastics Division products.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

- Of the 20 interviews completed with large petroleum and petrochemical firms, only 5 had 1976 expenditures for computer services in their wholesale operations, 1977 budgets are shown in Exhibit V-4.

- When asked, "What developments might increase your use of computer services?", respondents indicated:

  - "More proprietary data bases of interest"

  - "Opportunity to drastically reduce communications costs (e.g., IBM Satellite System)"

  - "If overloaded, we will go out for raw computer power"

  - "If outside service can do it cheaper and better"

- The data bases most important to this sector are transportation rate and routing data bases such as are offered by Distribution Sciences, Inc. (Schiller Park, IL), and Numerax Corp. (Englewood, NJ).

  - The DSI service is overnight remote batch.

- Only 3 firms appear to have been successful with comprehensive order entry packages and/or service, and they are Brandon Applied Systems (San Francisco), Keydata (Wellesley, MA), and Trans-Com (Windsor Locks, CT).

- Overall, the degree of automation of order entry systems in this sector, whether performed internally or externally, is surprisingly low with petrochemical firms being more advanced than petroleum firms.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT V-4

1977 BUDGETS FOR WHOLESALE COMPUTER SERVICES

PETROLEUM/PETROCHEMICAL USERS

FIRM TYPE	TOTAL PARENT COMPANY ANNUAL REVENUES	EDP SERVICES BUDGET	% OF SERVICES REVENUES	COMMENTS
PETROLEUM	$2.5B	$ 60,000	<0.01	Mainly standard packages, both theirs and vendors', for demand forecasting, performance reporting, distribution models. Vendors include NCSS and CSC.
PETROLEUM	0.3B	54,000	0.02	Using Keydata software packages on G.E. network. Order entry system, mainly for inventory update.
PETROCHEMICAL	3.4B	300,000	0.01	Order entry for wholesale and non-wholesale products, as well as general business. Package purchased from vendor, will be used in-house on DEC-1170s. Outside expenditures will be zero by 1978.
PETROCHEMICAL	1.4B	100,000	0.03	Testing a software package offered by a service vendor. If it works, they will buy it and run it in-house.
PETROLEUM	$5.1B	$ 17,000	<0.01	For software products and services used in sales forecasting.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

2. ELECTRICAL AND ELECTRONIC WHOLESALE USERS

- Five of the 10 respondents use computer services and are shown in Exhibit V-5. A sixth changed from computer services to an in-house IBM System 3 about 18 months ago to achieve "lower cost and better control".

- American Data Centers (Hutington Beach, CA) and Xerox Computer Systems (XCS) are each mentioned twice as a vendor followed by single mentions of Tymshare and MCAUTO.

- These services users express an unusually high level of interest in facilities management (FM). In fact, 2 of them are pursuing such arrangements with their vendors.

- There seems to be little interest in developing any applications beyond general business accounting, order entry, and inventory control. Service usage would increase as a funciton of increased user revenues.

- Software is mostly owned and supplied by the services vendor.

- As usual, "Reliability" ranks as the highest single factor in selection of a computer services vendor, as shown in Exhibit V-6.

- "Network Availability" ranks second, largely due to the widespread geographical nature of this industry's activities. Multi-location warehouses are best served by a modular communications network.

- The low ranking of "Vendor Applications" is probably due to the almost universal availability of general business, order entry and inventory control software products.

- Users tend to stick with a chosen vendor unless price and/or service gets outside tolerance levels. For these 5 users, an in-house computer is unlikely to be an alternative to computer service at this time.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT V-5

1977 BUDGET FOR WHOLESALE COMPUTER SERVICES

ELECTRICAL/ELECTRONIC USERS

FIRM TYPE	ANNUAL REVENUES	EDP SERVICES BUDGET	% OF SERVICES REVENUES	COMMENTS
ELECTRONICS	N/A	N/A	N/A	Dedicated system with 160 CRTs. Vendor software, order entry, inventory, general business.
ELECTRONICS	$125M	$ 75,000	0.1	General business and inventory control. Considering FM. Wants distributed processing.
ELECTRICAL	20M	200,000	1.0	General business and inventory control. Plans to go in-house, on-line.
ELECTRONICS	100M	300,000	0.3	General business and on-line order entry and inventory control. Negotiating FM contract.
ELECTRONICS	$115M	500,000	0.4	General business, order entry, inventory control. Wants FM. Interested in distributed processing.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

RANKING OF FACTORS USED IN SELECTING COMPUTER SERVICES VENDORS

(ELECTRICAL/ELECTRONIC AND FOOD WHOLESALERS)

	NUMBER OF TIMES RANKED					
	ELECTRICAL/ELECTRONIC			FOOD		
	LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
RELIABILITY	0	0	5	0	0	4
NETWORK AVAILABILITY	2	0	3	4	0	0
PRICE	1	0	4	1	0	3
VENDOR HARDWARE/OS	1	1	3	0	1	2
VENDOR KNOWLEDGE OF INDUSTRY	1	2	2	2	1	1
VENDOR APPLICATIONS	2	2	1	0	1	2

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

- Where a new service vendor would be chosen on the basis of price, users express a requirement for 20%-30% price improvement.

3. FOOD WHOLESALE USERS

- Of the 8 interviews conducted, 4 respondents used computer services only and one uses services plus in-house data centers. Their 1977 budgets are shown in Exhibit V-7.

- Vendors mentioned include G.E., Keydata, NCSS, Tymshare and XCS. These are much the same vendors reported by electrical/electronic users, suggesting the transferability of software between industries. In fact, one user said he saw no need for vendors to specialize by industry. This is confirmed as an attitude of food wholesalers interviewed, by the data in Exhibit V-6, and differs from electrical/electornics wholesalers' views. Petroleum and petrochemical firms interviewed have a completely contrary view, urging vendors to specialize within industry sectors.

- Another difference in attitude about vendors is reflected in food wholesalers' lack of interest in a vendor's hardware/operating system, while some electrical/electronic wholesalers rank that aspect highly. No reason for this discrepancy is apparent.

- Food wholesalers also expect to stay with their services vendor unless service greatly deteriorates.

- All things being equal, users would change vendors for an average of 20%-30% price reduction with comparable service.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

EXHIBIT V-7

1977 BUDGETS FOR WHOLESALE COMPUTER SERVICES

(FOOD)

FIRM TYPE	TOTAL COMPANY ANNUAL REVENUES	EDP SERVICES BUDGET	SERVICES AS A % OF REVS	COMMENTS
CONFECTIONERY DISTRIBUTOR	$ 5M	$ 24,000	0.50	On-line terminal system for accounting and inventory control. (Keydata)
MEAT BROKER AND MANUFACTURER	20M	60,000	0.30	On-line for order entry, billing, accounting. (XCS)
PROCESSED SMOKED FISH BROKER	6M	18,000	0.30	Order entry, inventory, and accounting.
CHEWING GUM MFR. AND DISTRIBUTOR	0.5M	11,000	2.20	Order entry, inventory control, accounts receivable
LARGE MULTI-LINE DISTRIBUTOR	$ 2.5B	$150,000	0.01	Financial services and business planning (G.E. and Tymshare). Large in-house EDP capability.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

VI. DISTRIBUTED SYSTEMS AND SMALL BUSINESS SYSTEMS

VI DISTRIBUTED SYSTEMS AND SMALL BUSINESS SYSTEMS

A. ATTITUDES VARY WIDELY

- Small business computers have potential at both ends of the user spectrum.
  - Larger users, with multiple warehouses and shipping locations, can use minicomputers-or intelligent terminals-in distributed networks.
  - Small users may go directly into a small business system from manual operations, or may convert from batch service bureaus or remote computing services when the economics appear to favor such a move.
- For most firms interviewed, distributed networking is an idea for the future. In fact, many of the largest EDP users in petroleum and petrochemicals, quite frankly, feel the concept is as yet unproven and is being pushed by minicomputer manufacturers.
- The main limitation at both ends seems to be the data base requirements.
  - Large users find the transmission of update information to all remote sites to be expensive. In addition, much more data than is required by any single site is transmitted every day.
  - Smaller users are concerned about reaching the upper limit of capacity of the system in a few years.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Both limitations suggest some permanent data base division between stand-alone systems and a central CPU (whether it be owned by the firm or be a computer service company's CPU).

- The smaller wholesale distributors are clearly market as targets of opportunity for small business computers. An example of the specific industry oriented applications thrust is represented by IBM's product offerings for the System 32:

  - Hardgoods Distributor's Management Accounting System

    . Applies to 6 wholesale industry segments, including electrical and electronic.

    . Designed for distributors with 10-100 employees having annual revenues of $1 million-$10 million.

  - Wholesale Candy and Tobacco Accounting Management System

    . Applications include billing, inventory control, sales analysis, and accounts receivable.

    . Oriented towards first time users with 1200-2000 customers having annual revenues from $1 million-$7 million.

B. SOME TYPICAL DISTRIBUTED SYSTEMS

- Ashland Oil, Inc., has a distributed data entry and data processing configuration composed of Sycor 350 intelligent terminals connected to a central station which prepares a magnetic tape for the main computer system-a closely coupled pair of IBM 168 and 158. Data is keyed in at bulk liquid product shipping points by traditional product loading employees who have been trained to use "Menu" type option screens on the CRT. Invoices are

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

mailed 24 hours after the product has been loaded. Previously, Ashland used manual system with original documents being mailed or sent by facsimile. The system has been under consideration and development since 1973.

- Associated Wholesale Grocers, Inc. (Kansas City, Kansas) supplies over 10,000 different grocery items to 900 independent and chain store retailers in 7 states. Nearly 250 of these retailers have Digitronics and MSI terminals which communicate over dial-up telephone to an IBM 3704 controller which connects to AWG's IBM 370/145. Store personnel use portable 10-key cassette recorders to check inventory. AWG takes orders and also does pricing, case labeling, and recordkeeping for "member" retailers whose combined sales volume exceeds $500million.

- Gulf Atlantic Distribution Services, (Houston, Texas), a food processing firm, uses Datapoint Model 5500 adn 2200 configurations in a distributed processing mode connected to the parent's central computer in Dallas. Warehouses are located in Atlanta, Denver, New Orleans, and Arlington, TX. During the last 3 years, the firm has moved from manual operations to this distributed system. Over 100 programs were written in-house, in BASIC. Warehouse clerical staffs have been reduced 10%-35%. Operator training takes about an hour and a half compared with weeks of training for manual operations. At the end of each day, warehouse systems transmit batch data over dial-up telephone lines. Inventory and other management reports are returned the next day via the 300 l.p.m. printers at each warehouse location.

C. SOME STAND-ALONE MINI SYSTEMS

- Maroun Bros., Inc. (Lawrence, MA), supplies 300 "Mom and Pop" grocery stores with canned and boxed goods, frozen foods, and dairy products, amounting to about $3 million per year. For 8 years prior to their purchase of a Basic Four Model 350 in 1972, all 7,000 items of inventory were manually accounted. The system performs order entry invoicing, inventory control, accounts receivable,

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

payroll, and accounts payable. Maroun computes their customer's bills, their resulting gross margin, and recommends retail prices in addition to preparing a 125 page bi-monthly order catalog. The system uses a single CRT and a medium speed printer.

- Steinfeld's Products (Portland, Oregon), is a food processing firm that manufactures and distributes pickles and sauerkraut under various brand names. In 1976, almost all accounting, inventory, and payroll operations were being done by hand for a seasonal business with payroll ranging from 85 to 140 employees. Because they market their products to numerous other distributors in relatively small quantities, the order entry and billing paperwork became excessive and Steinfeld's chose a Hewlett-Packard 9830 desk top computing system which uses modified HP software. The HP software performs order entry invoicing, inventory control and accounts receivable modules. Clerical time required for general office staff has been reduced 10% since the system was installed. Two employees have attneded HP classes in system operation.

D. TURN-KEY SYSTEMS AVAILABLE

- Many mini computer manufacturers and custom houses offer turn-key systems for the wholesale industry. Three examples are given below:

  - Olivetti Corp. of America offers a wholesale management systems designed to provide billing, sales analysis, inventory stock status, price lists, and re-order reports. The hardware features multi-form handling so that wholesalers may use ledger card records, if desired, in addition to floppy disc storage. The A6 turn-key system comes complete with printer and ranges between $17,500 and $24,500 with 20K bytes of memory and software.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Data Systems for Industry (Long Beach, CA) offers a turn-key system for multiple locations based on HP equipment. Data entry is via on-line CRTs. The system provides centralized warehousing and requirement planning, inventory control and purchase control. A basic system handles up to 12,000 inventory items with additional storage required to handle up to 38,000 items. A basic system, with a 32K word CPU, 15M byte disc drive, 60 lpm printer, and 2 CRTs costs $75,000, including software, and can be leased for $1,500 per month.

- Mini Business Systems, Inc. (Mountain Lakes, NJ) offers an entry level system based on Data General's Nova minicomputer. The turnkey system has available software for order entry, billing and sales analysis, inventory control, accounts receivable and payable, financial systems and payroll. Industry oriented application programs for distribution are available as well as for manufacturing and construction. With general applications software, a 32 word system, with CRT and 10M bytes of disc, and a printer sells for $40,000.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

VII. COMPUTER SERVICES VENDORS

VII COMPUTER SERVICES VENDORS

A. OVERVIEW

- Fifteen computer services vendors were interviewed during May and June of 1977. They are listed in Exhibit VII-1 along with an identification of which segments of the wholesale industry covered in this report they are involved in.

- Vendors have only a vague idea of the size of the market but consider it large enough to invest marketing and product efforts.

- Some vendors are more vulnerable to small business computers (SBC) than others. The more comprehensive their order entry/inventory control package (e.g., MACAUTO, American Data Centers), the less vulnerable to displacement by SBCs.

  - Small business computers are generally seen as a threat to the smaller client base and 3 significant vendors offer a hardware capability.

  - SBC are the greatest competitive threat to a processing services vendor who has a substantial client base with the following profile:

    . Monthly charge of less than $2,000
    . No remote computing service requirement
    . Purchasing primarily general business applications

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXHIBIT VII-1

COMPUTER SERVICES VENDORS AND WHOLESALE

INDUSTRY SPECIALIZATION

VENDOR	TOTAL ANNUAL COMPUTER SERVICES REVENUE ($M)	TOTAL WHOLESALE REVENUE ($M) (ESTIMATED)	INDUSTRY SPECIALIZATION		
			PETROLEUM/ PETROCHEMICAL	ELECTRICAL/ ELECTRONIC	FOOD
AMERICAN DATA CENTERS	3	3		X	
ADP	188	36	X	X	
BRANDON APPLIED	8	8	X		
COMPUTER SYSTEMS & EDUCATION	1	1			X
DISTRIBUTION SCIENCES	2	2	X		
GEIS	150	10	X		
ITEL	42	10	X	X	X
KEYDATA	15	5	X	X	X
MCAUTO	55*	5		X	
METRIDATA	10	1			X
RAPIDATA	16	1			X
SERVICE BUREAU CORP.	106	10			
TYMSHARE	82	5	X		
XEROX COMPUTER SERVICES	21	5	X		
TOTAL	$659	$102			

* Excludes Captive Revenues

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Flexible and varied pricing characterizes this industry. While resource pricing is still the main technique, 2 vendors offer transaction pricing (e.g., cost per invoice or bill of material) and 3 offer fixed price, flat fee, or one time charges.

- One software vendor (Brandon Applied) offers its package either via remote computing or on lease as most of its clients are very large and represent an in-house problem at the high end of the client size spectrum.

- A brief description of each vendor's posture follows:

B. CORPORATE SNAP-SHOTS

- Each of the following vendors was interviewed for this industry and offered this information:

- American Data Centers (Huntington Beach, CA)

  Specializes in offering a very comprehensive order entry/inventory control system to electronic wholesale distributors of components.

  Systems are customized and installed on a specialized basis for customers having multi location requirements.

  The basic system is "on-line"; however, batch processing is used for reports distributed on a periodic basis.

  XCS and MCAUTO are considered primary competition.

- Automatic Data Processing, Inc. (A.D.C.)

  Markets general business computer services to the petroleum and electrical segments of the wholesale distribution industry.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

Business Systems Service Group, about 1 year old, sells services as well as turnkey small business computer systems.

Services are primarily interactive with batch processing also offered. Applications include general business, order entry, inventory control and data base.

The average user is located in the New York City area, has annual revenues of from $1 million to $15 million and spends about $12K/yr.

The company anticipated their revenue from this market to double by 1982.

Total 1976 corporate revenues from all wholesale distribution is $36 million covering about 3,000 customers.

Main competition is from Itel; XCS and Keydata are lower on the competitive list.

As in other industry sectors, ADP's payroll service is widely used because it is economical and efficient even where large in-house EDP capability exists.

- Brandon Applied Systems, Inc. (San Francisco, CA)

Offers a very comprehensive product to the petroleum industry based upon the CIDS (Chemical Industry Distribution System) program developed by IBM in 1972 in conjunction with the petroleum industry.

- Business and specialty applications oriented and tailored to users' requirements (order entry, inventory control, distribution).

- Interactive with data base utilization.

In the petroleum/petrochemical industry, Brandon's automated order entry system is used by about 6 major clients and appears to be without comparable competitors.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

Brandon has been marketing CIDS since 1974.

Brandon offers its distribution system either on an interactive basis, or on lease for in-house use.

Most business is on the East Coast and Southwest U.S.. The largest potential market is in the Middle-East.

System installation takes ± 12 months and users are in the $300 million+ annual revenue category.

- Computer Systems and Education (Hartford, CT)

CSE services a chain of supermarkets with applications based on the financial packages available from Management Science of America (MSA).

Applications include payroll, accounts receivable and payable, and inventory management.

All service is batch processing and fixed price by negotiation with the customer.

- Distribution Sciences, Inc. (Schiller Park, IL)

Maintains a huge data base for the determination of the fastest transportation routing of product shipment at the lowest rates.

Customers are large manufacurers and/or wholesale distributors which have numerous manufacturing and distribution or warehousing locations.

Services interactive and the product is rather unique.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- General Electric Information Services (GEIS)

Emphasis on 5 targeted industries:

- Petroleum
- Electric power
- Banking
- CPA
- Utilities

In petroleum, 50% is general business and 50% is for scientific and engineering applications. The company views this market as having a 25% annual growth rate over the next five years.

About 2/3 of remote computing services are provided by interactive means and the balance is provided by remote batch.

The company communications networks capability offers a unique product and a competitive advantage.

There are substantial (approximately 200) software application products, half of which are owned by the developer.

GE, being involved in the petroleum industry for over 12 years, believes that they are the prime vendor. Greatest competition is considered to be from the in-house computer and secondly from Tymshare.

- Itel Data Services

The Data Services Group has successfully conducted an acquisition program which increased annual group revenue from $10 million in 1972 to $42 million in 1976.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

Strong emphasis on wholesale distribution, which accounts for approximately 33% of all revenues derived from Interactive Computing Services.

The company serves the 3 segments covered in this report with batch processing as the mode for general business applications, whereas "interactive on-line" delivers the order entry and inventory control applications.

Customers are serviced nation wide through 17 data centers.

The anticipated user growth for wholesale distribution interactive computing services is 23% per year through 1979.

Prime competitors are considered to be Keydata, XCS and Datafile.

- Keydata Corp.

The company is agressively pursuing the food and electronic segments of the wholesale distribution industry using an interactive computing system. Sales are currently to petroleum/petrochemical as well.

Complete distribution applications are available including order entry, inventory control, accounts receivable and payable, general ledger and purchasing.

Keydata service is based on a transaction pricing concept.

- MCAUTO

Heavily oriented to wholesale distributor marketing to the electronic industry.

"Co-op" is their electrical parts distributor customer on-line order processing and inventory control system offered as an interactive service or turnkey installation.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

Customers for this product usually are in the $50 million and up annual revenue category.

Respondent believes that the 1977 market for their distribution service will triple by 1982.

- Metridata

Food distribution processing to large fast food retail chains (i.e.: Kentucky Fried Chicken represents about 10% of revenues).

On-line service with terminals in warehouse (Note: KFC uses public warehouses).

Applications include order entry, inventory control and invoicing.

The market has little or no growth over the next 3 years.

- Rapidata, Inc.

Beginning to offer services to the fast food industry with national networks.

Services include: cash management, franchise evaluation, site selection, inventory control, cost accounting, etc.

The market for the service is relatively small, being less than $5 million in 1977 and doubling by 1982.

- Service Bureau Corp. (SBC)

Sells to the wholesale distribution industry in general but does not specialize in any segment of the industry.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

General business applications are furnished to the user by the batch processing mode of computer services.

Applications include payroll and labor distribution, accounts receivable and payable, general ledger, and inventory control.

- Tymshare, Inc.

Marketing concentration is toward the petrochemical industry.

Services primarily involve the planning and systems functions with emphasis toward data base management and in formation analysis systems.

Some inventory control applications are also sold to this industry.

Users are major companies having annual revenues in excess of $1 billion.

GEIS and UCC are prime competitors in this marketplace.

- (UCC) University Computing Corp.

Primarily scientific applications not general business related to the petroleum industry.

Considered by Tymshare to be an active competitor in this industry.

- (XCS) Xerox Computer Services

25% of the company's computer service revenue comes from customers in wholesale distribution.

Strong emphasis is placed on the distribution requirements of the electronics industry.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

Xerox product is called the "1-2-3 System" and is designed for wholesale distribution with annual sales as low as $500K.

Considers strongest competion to be from Itel, Keydata and the small business computer.

Interactive computing services are offered for general business applications as well as order entry and inventory control.

XCS has recently announced a 10% reduction in price on its "1-2-3 System" with service beginning for as little as $750K per month, permitting a more effective means of competing against the small business computer.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

APPENDIX A: DATA BASE

DISTRIBUTION OF USER EXPENDITURES FOR PROCESSING SERVICES IN 1976 BY MODE AND TYPE OF SERVICE FOR WHOLESALERS COVERED IN THIS REPORT ($ MILLIONS)

TYPE OF SERVICE	MODE OF SERVICE					TOTAL
	INTERACTIVE	REMOTE BATCH	DATA BASE	FM	BATCH	
GENERAL BUSINESS	4	7	0	0	28	$39M
SCIENTIFIC	0	0	0	0	0	0
SPECIALTY	9	5	2	7	7	30
UTILITY	2	2	0	1	20	25
TOTAL	$15M	$14M	$ 2M	$8M	$55M	$94M
	TOTAL RCS = $31.0M					

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited.

COMPUTER SERVICES EXPENDITURES BY SELECTED WHOLESALE INDUSTRY SEGMENTS 1976-1982

INDUSTRY MARKET	COMPUTER SERVICES EXPENDITURE				
	1976 ($ MILLIONS)	1977 ($ MILLIONS)	GROWTH (%)	1982 ($M)	AAGR(77-82) (%)
PETROLEUM/PETROCHEMICAL	$ 26.4	$ 29.6	12	$ 47.7	10
ELECTRICAL/ELECTRONIC	26.9	31.7	18	72.3	18
FOOD	61.6	69.0	12	127.0	13
SUB TOTAL	$114.9	$130.3	13.4	$247.0	13.7
TOTAL WHOLESALE	$377.0	$429.8	14.0%	$809.5	14.0%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPU

COMPUTER SERVICES MARKETS IN SELECTED WHOLESALE SEGMENT BY SERVICE MODE 1976-1982

MODE OF SERVICE	1976 ($ MILLION)	1977 ($ MILLION)	GROWTH (%)	1982 ($M)	AAGR 77-82 (%)
REMOTE COMPUTING SERVICES	$ 31.0	$ 36.9	19	$ 85.6	18.3
FACILITIES MANAGEMENT	8.0	9.2	15	18.4	15.0
BATCH SERVICES	55.0	58.9	7	84.0	7.0
PROCESSING SERVICES TOTAL	$ 94.0	$105.0	11.7	$188.0	12.3
SOFTWARE PRODUCTS	10.9	13.6	24.7	43.0	21.2
PROFESSIONAL SERVICE	10.0	11.7	17.0	16.0	6.3
TOTAL	$114.9	$130.3	13.4%	$247.0	13.7%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

EXPENDITURES FOR PROCESSING SERVICES IN SELECTED WHOLESALE SEGMENTS, BY TYPE OF SERVICE 1976 AND 1982

PROCESSING SERVICE	EXPENDITURES ($ MILLION) 1976	1982	AAGR %
GENERAL BUSINESS	$39	$ 76	11.9%
SCIENTIFIC	0	0	0
SPECIALTY APPLICATIONS			
Order Entry	9	21	15.0
Inventory Control	10	22	14.1
Other	11	22	12.3
Sub Total	30	65	13.7
UTILITY	25	47	11.1
TOTAL	$94	$188	12.3%

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

APPENDIX B: DEFINITIONS

APPENDIX B: DEFINITIONS

- Computer Services. These are services provided by vendors which perform data processing functions using vendor computers, or assist users to perform such functions on their own computers.

- The following are the definitions of the modes of service used in this report.

  - Remote Computing Services (RCS). Provision of data processing to a user by means of terminals at the user's site(s) connected by a data communications network to the vendor's central computer. The three sub-modes of RCS are:

    . Interactive (timesharing)-characterized by interaction of the user with the system, primarily for problem solving timesharing, but also for data entry and transaction processing. The user is "on-line" to the program/files.

    . Remote Batch-the user hands over control of a job to the vendor's computer which schedules job execution according to priorities and resource requirements.

    . Data Base-characterized by the retrieval of information from a vendor-maintained data base. This may be owned by the vendor or a third party.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Batch Services. This includes data processing performed at vendors' sites of user programs and/or data which are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and COM processing are also included. Batch services include those expenditures by users which take their data to a vendor site which has a terminal connected to a remote computer used for the actual processing.

- Facilities Management (FM) (also referred to as "Reserve Management" or "System Management"). The management of all or a part of a user's data processing functions under a long-term contract (not less than one year). To qualify as FM, the contractor must directly plan and control, as well as operate, the facility provided to the user on-site, through communications lines or in mixed mode. Simply providing resources, even though under a long-term contract and/or for all of a user's processing needs, does not necessarily qualify as FM.

- Professional Services. Management consulting related to EDP, systems consulting, systems design and programming, and other professional services are included in this category. Services can be provided on a basis of: "Time and materials", whereby the user pays for the time used of an individual on a daily or other fixed rate, or "fixed price", where the user pays a fixed fee for a specific task or series of tasks.

- Software Products. This category is for users' purchases of systems and applications packages for use on in-house computer systems. The figures quoted include lease and purchase expenditures, as well as fees for work performed by the vendor to implement the package at the users' sites. Fees for work performed by organizations other than the package vendor are counted in professional services. The two sub-categories are:

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Systems Packages-operating system, utilities, and language routines that enable the computer/communications system to perform basic functions. This software is provided by the mainframe manufacturers with their hardware; other vendors provide improved versions of this and special-purpose routines. This classification includes compilers, data base management software, communications packages, simulators, performance measurement software, diagnostic software, and sorts.

- Applications Software-software which perform processing to serve user functions. They consist of general purpose packages, such as payroll, accounting and inventory controls, and special purpose packages such as personal trust, airline scheduling, and demand deposit accounting.

- Graphic Packages-provide an interface with any applications program requiring visual design or display of input or output data. This interface can be provided either on or off line. A CRT or a plotter can be used for output and a keyboard, a joystick, a Rand tablet, or a light pen can be used as input.

- Processing Services-encompasses FM, RCS, and Batch Services. They are categorized by type of service, as distinguished from mode of service, bought by users as follows

  - General Business Services-processing services for applications which are common to users across industry categories. Software is provided by the vendor. This can be a complete package, such as a payroll package, or an application "tool", such as a budgeting model where a user provides much of the customizing of the finished product it uses. General business processing is often repetitive and transaction-oriented.

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

- Scientific Applications Services-the processing of scientific and engineering problems for users across industries. The problems usually involve the solution of mathematical equations. Processing is generally problem solving and is non-repetitive, except in the sense that the same packages or "tools" are used to address different, but similar, problems.

- Specialty Applications Services-provide processing for particular functons or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or an application "tool" which the user employs to produce its unique solution. Specialty applications can be either business or scientific in orientation. Data base services where the vendor supplies the data base and controls access to it (although it may be owned by a third party) are also included under this category. Examples of specialty applications are: seismic data processing, numerically-controlled machine tool software control development, and demand deposit accounting.

- Utility Services-those where the vendor provides access to a computer and/or communications network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal handling software, sorts, language compilers, data base management systems, information retrieval software, scientific library routines, and other systems software.

- All expenditures and revenues addressed are "available" in that they are open for competition. "Captive" figures, which refer to expenditures by user for services from a subsidiary company, such as Boeing Aircraft with Boeing Computer Services (BCS), are not included. They may be referred to when examining our individual "spinoff" vendor, such as BCS.

- When any questions arise as to the place to properly count certain user expenditures, INPUT addresses the questions from the user's viewpoint and categorizes the expenditures according to the answer to the question, "What does the user perceive he is buying?"

© 1977 by INPUT, Menlo Park, CA. 94025. Reproduction Prohibited. INPUT

APPENDIX C: QUESTIONNAIRES

CONFIDENTIAL

INPUT QUESTIONNAIRE CATALOG NO. ☐☐☐☐☐☐☐

STUDY TITLE: MARKET ANALYSIS SERVICE

TYPE OF INTERVIEW: EDP USER

PURPOSE: To study the use of computer services and the attitudes of key users to future development.

Computer Services Use

1. Do you use any of the following computer services? Please indicate dollar amount (give range if unable to give exact figures) for 1977 and percent changes from 1976 to 1977 and from 1977 to 1982.

	1977	77/76	82/77	Vendor/Comment
REMOTE COMPUTING				
Timesharing				
Remote Batch				
Data Base				
BATCH PROCESSING				
FACILITIES MANAGEMENT				
SOFTWARE PRODUCTS				
Systems				
Applications				
SOFTWARE SERVICES				
Consulting				
Programming				
EDUCATION				

2. For processing performed by outside organizations please indicate the functional/applications area and reason for use.

Functional/ Applications Area	Vendor Software or Yours	Reason for Use
Current Processing		
Planned Processing		

CATALOG. NO. ☐☐☐☐☐

3. In order of priority, what will be the new applications you will develop or require?

Priority	Application	Processing Mode	By when	Comment
1				
2				
3				
4				
5				
6				

4. Do you have the internal resources to develop and operate these?

5. a) Which ones, if any, could be developed and/or operated by an outside service?

   b) What types of consulting or additional support will you require?

6. Are there any of these applications which you would not consider doing outside? Why not?

7. What percentage of your outside processing requires or will require use of a Data Base/File Management system?

   Now _____% 3 years _____%

   Which one(s)?

8. What services would you consider using if offered to you or would you like to see offered to you?

9. Have you considered/would you consider facilities management for processing services?

10. Do you have an in-house timesharing/remote batch function? How does this operate?

Mainframe	Operating System	No. of Terminals Supported	Special Support Functions

11. To what extent are outside services competing with in-house alternatives?

12. What developments might increase/decrease your use of computer services?

13. When you use an outside service who usually chooses the vendor?

14. Please rank the following factors from 1 to 5 in selecting outside vendors of computer services (1=unimportant, 5 = critically important)

Factor	Rating	Comments
Proximity		
Network Availability		
Vendor Hardware/ Operating System		
Vendor Applications		
Vendors Knowledge of Your Industry		
Price		
Reliability		
Other _____		

15. Under what conditions would you change vendors?

16. Assuming similar services, what price reduction would you require to change vendors?

_____ <10%	_____30-40%
_____10-20%	_____40-50%
_____20-30%	_____> 50%

17. Have you considered using minicomputers together with, or instead of, outside processing services? With what result?

Will you do so in the future?

18. Do you have any advice or suggestions you would like to offer to vendors of computer services?

CATALOG. NO. ☐☐☐☐☐

EDP Environment

19. Please indicate the concerns you have about EDP use?

a) Now:

b) By 1982:

20. What EDP changes do you expect will be made in the following periods:

Period	Change	Comment
1977		
1978		
By 1982		

21. What systems do you now use and plan for?

Mainframes	Mainframe Operating System	Op. System Data Base Language	Data Base Language Data Communications Software	No. of Terminals
CURRENT				
FUTURE				

22. How many EDP people do you and will you have?

1977	1978	1982	Reason for Change

23. How much is your corporate EDP budget and how will it change by 1978 and 1982 (Please give 1976 budget as % of annual revenues if unable to give dollars)

1977 Budget ($ or %)	Size in 1978 (or % growth)	Size in 1982 (or % growth)	Reason for Increase

CONFIDENTIAL

INPUT QUESTIONNAIRE Catalog No. M A S | | | | | | |

STUDY TITLE: MARKET ANALYSIS SERVICE

TYPE OF INTERVIEW: SERVICES VENDOR

MARKET ANALYSIS PROGRAM/WHOLESALE DISTRIBUTION

---

1. Do you provide services to any of the following wholesale distribution industry users?

   _____a. Petroleum/Petrochemical

   _____b. Electrical/Electronic

   _____c. Food

   _____d. Alcoholic beverages

2. What services do you provide for them?

3.

Type	Geog. Dist.	Size of Av. User	# of Clients	$ by Av. User	Expected User Growth	Share of Your Rev.

4. Does your product/service have any unique capabilities which would make it more attractive to clients than your competitors?

5. Do your marketing, sales or support organizations have any unique capabilities or characteristics which would make your company more attractive to potential clients than your competitors?

6. Who are your major competitors? In what order would you rank yourself and your major competitors in terms of market share?

COMPETITOR	RANK

7. How do you price your service/product to your clients? (Transaction pricing, connect, memory, CPU, etc.)

8. What level of person in an organization needs to be convinced before the company will buy your services?

9. What is your opinion of the potential threat of mini-computers to your business in these areas?

10. What do you think is the total dollar market for your distribution service?

    a. Now (1977) _____%

    b. 1982 _____%

11. What percentage of all those who could use a product/service such as you provide do you believe are actually using it?

    a. Now (1977) _____%

    b. 1982 _____%

12. What are the others (non-users) doing now to accomplish the same goals?

13. Where will the new users come from?

14. Please send product literature.

15. Please provide data for CAMP.

16. Do you buy computer services yourself (time, software, etc.)?